

D.10 Noise

This section addresses the setting and impacts of the noise environment. Specifically, Section D.10.1 provides a description of the environmental baseline, followed by applicable regulations, plans, and standards in Section D.10.2. An environmental impacts analysis of the Proposed Project and alternatives is provided in Sections D.10.3 through D.10.6.

D.10.1 Environmental Baseline

Environmental noise usually consists of a base of steady “background” noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway.

To describe noise environments and to assess impacts on noise sensitive areas, a frequency weighting measure which simulates human perception is customarily used. This “A-weighting” frequency scale reflects the human ear’s reduced sensitivity to low frequencies and allows a correlation to human perceptions of the annoying aspects of noise. As such, the A-weighted decibel scale (measured in dBA) is the one used for most environmental or community noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound pressure levels to which the human ear is sensitive.

Since environmental noise does not remain static through a typical day, various noise metrics are commonly used to recognize that noise effects on people largely depend on the total acoustical energy of the noise, as well as the time of day when the noise occurs. The equivalent sound level (L_{eq}) is the average acoustic energy content of noise for a stated period of time, typically one hour, $L_{eq}(h)$. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. The day-night average noise level (L_{dn}) is a 24-hour average L_{eq} with an additional 10 dBA “penalty” added to noise that occurs between 10 p.m. and 7 a.m. The effect of the penalty is that an event occurring during nighttime hours, when people are most sensitive, would have the same consequence as ten of the same events occurring in the daytime. The Community Equivalent Noise Level (CNEL) is a 24-hour average noise level similar to the L_{dn} , with an additional 5 dBA penalty for events occurring between 7 p.m. and 10 p.m. The terms are summarized below.

- L_{eq} is the average A-weighted noise level that generates the same total acoustical energy as a time varying noise during the same time period.
- L_{dn} is a 24-hour day-night measurement with penalty of 10 dBA added to noise generated between 10:00 p.m. and 7:00 a.m.
- The Community Noise Equivalent Level (CNEL) adds a 5 dBA “penalty” for the evening hours between 7:00 p.m. and 10:00 p.m., in addition to the 10 dBA penalty for the L_{dn} .
- Peak noise levels during any time period can be characterized with statistical terms.
- L_{10} is the noise level exceeded 10 percent of the time.
- L_{50} is the noise level that is exceeded half of the time.
- L_{max} is the peak noise level occurring anytime.

A person’s reaction to changes in environmental noise is somewhat independent of the existing noise levels. Changes of more than 10 dBA are subjectively perceived as a doubling of loudness, and changes in

noise levels of more than 5 dBA are usually required before any noticeable change in community response occurs. Any change of less than 3 dBA is not normally perceivable outside a controlled environment (U.S. EPA 1974). Existing noise levels in a community are usually considered to be “low” when they are under 45 dBA, moderate in the 45 to 65 dBA range, and high above 65 dBA. Above 65 dBA, speech interference occurs. Noise levels greater than 85 dBA can result in physiological effect such as startling and temporary or permanent hearing loss.

D.10.1.1 Regional Overview

A wide range of noise sources occur in the project area, mainly due to the wide range of land uses that would be traversed by the pipeline alignment. Ambient noise levels tend to be lower in the agricultural and open areas away from the industrial or commercial uses of the suburban areas. Noise levels in the region are the highest near major transportation corridors (e.g., interstate highways and railroads) and industrial facilities. Ambient noise levels were not monitored in the project area, but they will be described below qualitatively.

Noise sensitive receptors and noise sensitive areas (NSAs) are located throughout the region, mainly clustered in the suburban areas. They include residences (multi-family, single family, and rural residences), schools, religious facilities, hospitals, and parks. The land use section of this report identifies these uses where they are known to be near the proposed pipeline’s alignment. Agricultural, industrial, and commercial land uses and open space not used for recreation are not considered noise sensitive.

D.10.1.2 Environmental Setting: Proposed Project

Segment 1 (MP 0–6.1) – Contra Costa County and Carquinez Strait

Residences and a day care center are located to the west within 400 feet of the proposed alignment on Central Avenue and Irene Drive in unincorporated Contra Costa County. Some homes would be within 100 feet of the alignment. The remainder of the segment would traverse industrial and open areas, including the Carquinez Strait, which are not noise sensitive.

The Concord Station is at least one-quarter mile from any noise sensitive areas in Concord, which are all south of State Route 4.

Phases 1 and 2 Carquinez Strait Crossing

No noise sensitive receptors are present in the vicinity of the Carquinez Strait crossing. Section D.4 provides discussion on biological resources in the Carquinez Strait area that could be affected by construction noise.

Segment 2 (MP 6.1–17.6) – Benicia and I-680 Frontage

There are no NSAs near the proposed alignment in Benicia. Noise sensitive rural residences are located west of the proposed alignment west of Interstate 680 in unincorporated Solano County. These residences would be within 100 feet of the alignment. More distant residences (approximately 300 feet from the alignment) would again be west of I-680 and Ramsey Road near the Gold Hill Road interchange within the City of Fairfield.

Segment 3 (MP 17.6–24.5) – Cordelia

A few noise sensitive rural residences are located north and south of the proposed alignment in unincorporated Solano County. These residences would be approximately 200 to 400 feet from the proposed alignment.

Cordelia Mitigation Segment

The Cordelia Mitigation Segment for the proposed pipeline would occur along Cordelia Road in unincorporated Solano County. As with Segment 3 of the Proposed Project, a few residences would be approximately 200 to 400 feet from the alignment.

Segment 4 (MP 24.5–30.7) – Fairfield/Suisun City

Many noise sensitive homes, schools, and religious facilities are located north and south of the proposed alignment as it travels through Fairfield and Suisun City along Railroad Avenue and Tabor Avenue. Many of the properties would be within 100 feet of the alignment. Additional rural residences are located within 200 feet east and south of the proposed alignment near the eastern boundary Fairfield, in unincorporated Solano County.

Segment 5 (MP 30.7–65.1) – Solano and Yolo Counties Agricultural Area

A few rural residences are scattered on the western portion of this segment, north of Hay Road in unincorporated Solano County. Additional rural residences are along the proposed alignment as it approaches the Yolo County boundary. Homes are near Robben Road, Binghamton Road, King Road, Yolano Road, Mace Boulevard, and Putah Creek. Some of these homes are approximately 100 to 200 feet from the proposed alignment.

Segment 6 (MP 65.1–69.9) – West Sacramento

Single family homes and some religious facilities are located north and west of the proposed alignment as it traverses West Sacramento. The nearest residences and one park are just west of Jefferson Boulevard approximately 200 feet north of the alignment for approximately one-half mile. The remainder of the surrounding land uses in West Sacramento are industrial or open space.

The Sacramento Station is approximately 400 feet from the nearest homes, which are west of Jefferson Boulevard.

Segment 7 – Wickland Connection

No NSAs are located along the alignment of the proposed Wickand Connection along the north side of West Sacramento. The nearest motel is approximately 400 feet to the south.

D.10.1.3 Environmental Setting: Existing Pipeline ROW Alternative

The Existing Pipeline ROW Alternative would occur in many of the same communities as the proposed pipeline. However, additional NSAs in the downtown areas of both Dixon and Davis would be within close proximity of the Existing Pipeline ROW Alternative. This alternative would also traverse the unincorporated town of Elmira and portions of the University of California, Davis. NSAs identified above in Segments 4 and 6 would also be near the Existing Pipeline ROW Alternative. This means that noise

sensitive areas in Fairfield, Suisun City, and West Sacramento would continue to be near the alignment with this alternative.

Two mitigation segments are suggested for this alternative. The first, EP-1, would modify the Existing Pipeline ROW Alternative so that it followed parts of the proposed pipeline route (see discussion of Segments 2 and 3 above), which would affect more (but still sparse) rural residences than the original alternative segments. The second, EP-2, would move the alignment away from NSAs in downtown Davis.

D.10.1.4 Environmental Setting: No Project Alternative

The No Project Alternative could lead to transportation of petroleum products by tanker trucks or trains. Pipeline and booster pump construction could occur along the existing Concord-Sacramento pipeline (see Section D.10.1.3) or the Concord-Sacramento-Stockton pipeline. The latter route traverses more densely /populated areas of Pittsburg, Antioch, and Stockton.

The major truck and rail transportation corridors in the region are the interstate highway system and the Union Pacific Railroad (UPRR). The highways or railroad either pass through or by all of the jurisdictions identified above. NSAs in some communities are directly exposed to existing highway and railroad noise. The extent of the exposure depends mainly on distance and shielding by other structures.

D.10.2 Applicable Regulations, Plans, and Standards

As a general matter, federal and State agencies regulate mobile noise sources and noise from construction equipment to protect workers at the site. Local agencies usually plan land uses to avoid noise conditions that are incompatible with defined land uses and regulate nuisance noise, such as construction activity. The scope of the applicable regulations is summarized below.

D.10.2.1 Federal

There are no federal noise standards that directly regulate noise from construction or operation of the project. Federal regulations that safeguard the hearing of workers exposed to occupational noise are enforced by the Occupational Safety and Health Administration (OSHA; e.g., 29 CFR 1910.95). For example, it is illegal for employees to be exposed to noise levels in excess of 115 dBA for more than 15 minutes during any working day.





D.10.2.2 State

The State of California, Governor's Office of Planning and Research, encourages each local city and county government to perform noise studies and implement a noise element as part of their general plan. The General Plan Guidelines establish recommendations for evaluating the compatibility of land uses as a function of community noise exposure, depending on the sensitivity of the land use. For example, noise levels below 55 L_{dn} would be clearly acceptable for noise sensitive, low-density, single family residential areas, while noise levels above 75 L_{dn} would be clearly unacceptable.

Table D.10-1 is a reproduction of the California noise compatibility recommendations.

Table D.10-1. Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE – L _{dn} or CNEL (db)									
	50	55	60	65	70	75	80			
Residential - Low Density Single Family, Duplex, Mobile Home										
Residential - Multi-Family										
Transient Lodging - Motel, Hotel										
Schools, Libraries, Churches, Hospitals, Nursing Homes										
Auditorium, Concert Hall, Amphitheaters										
Sports Arena, Outdoor Spectator Sports										
Playgrounds, Neighborhood Parks										
Golf Courses, Riding Stables, Water Recreation, Cemeteries										
Office Buildings, Business Commercial and Professional										
Industrial, Manufacturing, Utilities, Agriculture										

	Normally Acceptable Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.
	Normally Unacceptable New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable New construction or development generally should not be undertaken.

Source: State of California General Plan Guidelines, Office of Planning and Research, November 1998.

D.10.2.3 Regional and Local

Each local jurisdiction regulates the activities of the general public to minimize disruption of neighboring land uses. The proposed and alternative pipeline routes pass through the following local jurisdictions: unincorporated Contra Costa County, City of Martinez, City of Benicia, unincorporated Solano County, the City of Fairfield, the City of Suisun City, unincorporated Yolo County, and the City of West Sacramento. Most cities and counties adopt the State's noise compatibility guidelines for deter-

mining whether a operation of new project would meet acceptable exterior noise level standards. Construction noise is managed differently in each jurisdiction.

Table D.10-2 summarizes the limitations on construction hours and construction equipment noise standards based on a survey of local noise ordinances and local general plans.

Table D.10-2. Construction-Related Noise Limitations for Proposed Pipeline Route and Alternatives

Jurisdiction	Construction Hours Limitations	Construction Equipment Standards
Contra Costa County	<ul style="list-style-type: none">• 7:30 a.m. to 5:00 p.m., weekdays only (when in public roads)• No limitation when in private right-of-way	<ul style="list-style-type: none">• None
Martinez	<ul style="list-style-type: none">• None anticipated, general nuisance only	
Benicia	<ul style="list-style-type: none">• 7:00 a.m. to 10:00 p.m., everyday.	<ul style="list-style-type: none">• None
Solano County	<ul style="list-style-type: none">• None in general plan	
Fairfield	<ul style="list-style-type: none">• 7:00 a.m. to 10:00 p.m., every day	<ul style="list-style-type: none">• Shall not exceed 70 dBA, measured at 50 feet from source.
Suisun City	<ul style="list-style-type: none">• 7:00 a.m. to 6:00 p.m., weekdays• 9:00 a.m. to 5:00 p.m., Saturdays• Prohibited Sundays and holidays	<ul style="list-style-type: none">• None
Yolo County	<ul style="list-style-type: none">• None	<ul style="list-style-type: none">• None
Davis	<ul style="list-style-type: none">• 7:00 a.m. to 7:00 p.m., weekdays• 8:00 a.m. to 8:00 p.m., Saturdays and Sundays• Certain activities allowed after 6:00 a.m. if more than 200 feet from existing residences	<ul style="list-style-type: none">• Shall not exceed 83 dBA, measured at 25 feet from source.• Shall not exceed 86 dBA, measured at the project property boundary.
West Sacramento	<ul style="list-style-type: none">• None, however noise standards vary	<ul style="list-style-type: none">• Shall not exceed 70 dBA, measured at the nearest residence, between 7:00 a.m. and 10:00 p.m.• Shall not exceed 65 dBA, measured at the nearest residence, between 10:00 p.m. and 7:00 a.m.

Source: Compiled by Aspen Environmental Group, telephone correspondence, 2003.

D.10.3 Environmental Impacts and Mitigation Measures for the Proposed Project

D.10.3.1 Introduction

Short-term construction impacts and long-term operational impacts would result from implementation of the Proposed Project. In this section, the potential impacts associated with the construction and operation of the Proposed Project are analyzed. Noise impacts from construction, operation, and accidents are described in Sections D.10.3.3 through D.10.3.5, including presentation of mitigation measures for identified impacts. Section D.10.3.6 summarizes impacts and relevant mitigation measures for each of the seven project segments.

D.10.3.2 Definition and Use of Significance Criteria

Adverse impact on environmental noise levels would be considered significant and would require additional mitigation if:

- Noise attributable to the operation of a proposed or modified compressor station would exceed an L_{dn} of 55 dBA at nearby noise sensitive areas (NSAs), such as residences, schools, hospitals, or other occupied dwellings; or
- Noise generated by project-related construction or operations exceeds applicable State and local standards at nearby NSAs.

D.10.3.3 Impacts of Pipeline Construction

Construction noise can be created from on-site and off-site sources. On-site noise sources principally consist of the operation of heavy duty diesel- and gasoline-powered construction equipment. Off-site noise sources include vehicles commuting to and from the job site, as well as from trucks transporting material to the staging areas or construction right-of-way (ROW). Worker exposure to construction noise is also a concern.

Section B.4 of the Project Description provides details on the proposed construction. Work could occur simultaneously on different spreads over the anticipated eight-month construction schedule. Approximately 125 people could be working on the mainline spread while approximately 75 people work on a street work spread. Smaller crews would be involved for work around waterway, railroad, and highway crossings and work at the stations. Approximately four staging areas, two to three acres in size, would be located along the route (but their specific locations have not yet been identified). The staging areas would be focal points of activity because workers would report to the staging areas each day and miscellaneous equipment and material storage would occur there. SFPP has specified that all construction equipment would be fitted with appropriate mufflers and all engines would be maintained regularly.

Impact N-1: Noise from Construction

Construction work would cause noise that would be short-term in duration. Noise levels from construction activities on-site and off-site could exceed applicable standards at sensitive residential receptors and other noise sensitive areas near the pipeline route, staging areas, and access roads. (Potentially Significant, Class II)

Impact Discussion

On-Site Noise Sources. On-site construction noise would occur primarily from heavy-duty construction equipment (e.g., backhoes, excavators, loaders, cranes, and drill rigs). Noise levels from these individual pieces of construction equipment range from 70 dBA to 98 dBA at a distance of approximately 50 feet. Noise levels at greater distances can be estimated based on the assumption that noise from a localized source is reduced by approximately 6 dBA with each doubling of distance from the source of noise. Table D.10-3 reviews the typical noise levels for equipment that would be used to construct the pipeline and station modifications.

Noise from on-site construction activities is usually intermittent or continuous but only for a short-term duration. Mobile equipment (e.g., backhoes, excavators, loaders, and cranes) may be operating near an NSA along the pipeline route at various times during the construction period. Equipment that is generally fixed (e.g., drill rigs and compressors) may remain at a work site or staging area throughout the eight-month duration of construction. Along the mainline and street work spreads, the equipment would be spaced along the pipeline route. For each type of work spread, SFPP has developed an extensive inventory of the types of equipment that could be present.

Table D.10-3. Typical Noise Levels for Construction Equipment

Equipment	Typical Noise Levels (dBA, at 50 feet)	Equipment	Typical Noise Levels (dBA, at 50 feet)
Front loaders	85	Forklifts	76-82
Backhoes, excavators	80-85	Pumps	76
Tractors, dozers	83-89	Generators	81
Graders, scrapers	85-89	Compressors	83
Trucks	88	Pneumatic tools	85
Concrete pumps, mixers	82-85	Jack hammers, rock drills	98
Cranes (movable)	83	Pavers	89
Cranes (derrick)	88	Compactors	82
Pipelayers	83-88	Drill rigs	70-85

Source: Adapted from U.S. Environmental Protection Agency, Noise from Construction Equipment and Operations, 1972 and U.S. Department of Transportation, Federal Transit Administration, Noise and Vibration Impact Assessment Guideline, April 1995.

To determine the potential noise levels from on-site construction activity, the equipment inventory can be simplified for each type of work spread. Numerous pieces of equipment may operate in one area concurrently because many construction activities (e.g., ditching, welding, pipelaying, backfilling) could occur simultaneously. Scenarios for the worst-case noise levels from each spread were developed based on the extensive inventory provided by SFPP. Composite noise levels were predicted based on each spread with eight to twelve pieces of construction equipment typically generating the highest levels of noise and tending to stay in one general location for the longest period of time. Table D.10-4 shows the composite noise levels for each construction spread

Table D.10-4. Composite Noise Levels for Each Construction Spread

Spread Type	Composite Noise Level (dBA, at 50 feet)	Simplified Equipment Inventory per Location
Mainline spread	95	Cranes, heavy trucks, pipelayers, excavators, backhoes, air compressors
Street work spread	94	Cranes, heavy trucks, pipelayers, backhoes, air compressors
Boring crews	92	Cranes, heavy trucks, excavators, air compressors, drill rigs, pumps
Drilling crews	95	Cranes, heavy trucks, excavators, drill rigs, pumps
Station work crews	93	Cranes, heavy trucks, pipelayers, backhoes, air compressors.

Source: Aspen Environmental Group, 2003.

Based on composite noise levels presented in Table D.10-4, peak noise levels for the mainline spread are estimated to be approximately 95 dBA at 50 feet, 89 dBA at 100 feet, 77 dBA at 400 feet, and 69 dBA at 1,000 feet. Other work spreads would create less noise.

The peak noise levels associated with work along the mainline spread would be short-term in duration, but they would create adverse impacts depending on the proximity of NSAs to the travel routes and the hours of off-site construction activity. In some municipalities, nighttime construction may be required to minimize the impacts on local traffic. Coordination with local municipalities would be necessary to meet more-stringent nighttime noise standards. Construction noise of the levels shown in Table D.10-4 could exceed local standards by as much as 15 dBA. The impact of construction noise generated on-site would be partially reduced with implementation of Mitigation Measures L-1a and L-1b identified in the Land Use section. Mitigation Measure N-1a is identified below to ensure that nighttime work would not exceed local standards (Class II).

Off-Site Noise Sources. The off-site component of construction noise would occur primarily from commuting workers, and from a wide range of truck trips to deliver and recover materials at the work sites along the entire alignment. The procedures for bringing personnel, materials, and equipment to each work site would vary along the alignment. However, most workers would meet at the various staging areas and would travel to the construction site in commuter vans or buses. Truck trips would also be required to deliver heavy construction equipment, pipe, aggregate, asphalt, and other materials.

The peak noise levels associated with passing trucks (up to 88 dBA at 50 feet) and commuting worker vehicles would be short-term in duration, but they could be adverse depending on the proximity of noise sensitive areas to the travel routes and the hours of off-site construction activity. In some municipalities, nighttime construction may be required to minimize the impacts on local traffic. This could cause disruptive noise from nighttime truck traffic if noise sensitive areas are not avoided. The impact of construction noise generated by off-site activity would be partially reduced with implementation of Mitigation Measures L-1a and L-1b identified in the Land Use section. Mitigation Measure N-1a is identified below to ensure that off-site activity related to nighttime work would not exceed local standards (Class II).

Worker Exposure. With regard to worker exposure to high noise levels during construction, all project personnel who could potentially be exposed to excessive noise levels would be provided personal protective equipment in accordance with Occupational Safety and Health Administration (OSHA) regulations and guidelines. Therefore, construction noise impacts to project personnel would be adverse, but less than significant (Class III). No mitigation is required for worker exposure.

Mitigation Measure for Impact N-1: Noise from Construction

N-1a Restrict Work Hours. SFPP or its construction contractor shall conduct all construction activities involving motorized equipment between the hours of 7 a.m. and 7 p.m. Monday through Saturday, or as stipulated in an applicable noise ordinance or an agreement with the local jurisdiction. SFPP shall incorporate these restrictions in all construction plans and scheduling prior to construction.

Residual Impact. With implementation of Mitigation Measures L-1a, L-1b, and N-1a, impacts from construction noise from on-site and off-site activities (Impact N-1) would be less than significant.

D.10.3.4 Impacts of Pipeline Accidents

Impact N-2: Noise from Accident Response Activities

Noise levels from equipment used to clean up a pipeline spill could exceed applicable standards at nearby noise sensitive areas. (Less Than Significant, Class III)

Impact Discussion

A petroleum products spill would require a response involving appropriate equipment to contain and clean up the released product. The types of equipment used for cleanup would produce similar noise levels as those projected during construction of the pipeline itself and as a result, could exceed the significance criteria at sensitive receptor locations. However, based on the low projected number of incidents occurring during the 50-year life of the project (see Section D.2, Pipeline Safety and Risk of Accidents), the temporary noise impacts associated with cleanup operation are considered to be adverse, but less than significant (Class III).

Mitigation Measure. None required.

Residual Impact. The potential impact from noise during accident cleanup would be less than significant (Class III).

D.10.3.5 Impacts of Pipeline Operation

Impact N-3: Noise from Inspections and Maintenance Activities

Noise levels from routine operational inspections and maintenance of the pipeline could exceed applicable standards at nearby noise sensitive areas. (Less Than Significant, Class III)

Impact Discussion

Inspections of the pipeline route including crossings of utility and transportation corridors would occur at least biweekly. The primary noise sources associated with inspection are the transportation vehicles used by inspection personnel. Noise from light-duty vehicles used on the inspections could be occasionally intrusive where homes are within very close proximity, but it would occur only intermittently. This noise impact would be adverse, but not significant (Class III).

Most maintenance operations would be performed principally at the stations and pig launching and receiving points. However, maintenance work would also sometimes occur along the pipeline. Noise sources might occasionally involve welding equipment and cranes. The net increase in noise levels would be less than for pipeline construction and would occur only intermittently, at few locations along the route. This impact would be adverse, but not significant (Class III).

Mitigation Measure: None required.

Residual Impact. The potential impact from noise during inspection and maintenance activities (Impact N-3) would be less than significant (Class III).

D.10.3.6 Impacts by Segment

Segment 1 (MP 0–6.1) – Contra Costa County and Carquinez Strait

Mainline work and street work would occur within 100 feet of residences in unincorporated Contra Costa County. Construction activities would need to meet local limitations in unincorporated Contra Costa County. Construction noise impacts to these NSAs (Impact N-1) would be potentially significant (Class II) but mitigable to less than significant levels with implementation of Mitigation Measures L-1a, L-1b, and N-1a.

Phases 1 and 2 Carquinez Strait Crossing

No noise sensitive receptors are present in the vicinity of either the Phase 1 or Phase 2 Carquinez Strait crossing. Construction noise impacts (Impact N-1) would not be significant (Class III).

During 2002, work conducted by the California Department of Transportation on the new Benicia bridge revealed that fish in the Carquinez Strait may be sensitive to noise from submerged pile driving. According to local news media, the California Department of Fish and Game suspected that intense noise level peaks associated with unprotected pile driving underwater were the cause of fish kills in the strait. Pile driving is not a component of the SFPP project. Use of the existing pipeline through the

strait (Phase 1) and potential use of horizontal directional drilling to build Phase 2 of the Proposed Project would not cause intense noise level peaks. Thus the Proposed Project would avoid potentially adverse underwater noise impacts to fish. Section D.4 provides additional discussion on biological resources in the Carquinez Strait area.

Segment 2 (MP 6.1–17.6) – Benicia and I-680 Frontage

Mainline work and street work would occur within 100 feet of residences in unincorporated Solano County and within 300 feet of residences in Fairfield. Construction activities would need to meet local standards in Fairfield. Construction noise impacts to these NSAs (Impact N-1) would be potentially significant (Class II) but mitigable to less than significant levels with implementation of Mitigation Measures L-1a, L-1b, and N-1a.

Segment 3 (MP 17.6–24.5) – Cordelia

Mainline work and street work would occur within 400 feet of residences in unincorporated Solano County. No standards apply to construction noise in unincorporated Solano County. Construction noise impacts to these NSAs (Impact N-1) would be adverse, but less than significant (Class III).

Environmental Impacts of the Cordelia Mitigation Segment

This mitigation segment was developed to avoid sensitive biological and water resources within Cordelia Marsh and Slough. The 2.6-mile segment diverges from the proposed route at MP 17.6 and rejoins the proposed route at approximately MP 20.0. The Cordelia Mitigation Segment parallels Ramsey Road until Cordelia Road, where it continues along Cordelia Road to the UPRR ROW where it rejoins the proposed route (see Figure D.4-3).

The noise impacts and mitigation measures for construction of the Cordelia segment would be similar to those of the Proposed Project, since the two routes are within the jurisdiction of Solano County, with approximately the same number of NSAs. No standards apply to construction noise in unincorporated Solano County. Construction noise impacts to these NSAs (Impact N-1) would be adverse, but less than significant (Class III).

Segment 4 (MP 24.5–30.7) – Fairfield/Suisun City

Mainline work and street work would occur within 100 feet of many homes, schools, and religious facilities in Fairfield and Suisun City and within 200 feet of rural residences in unincorporated Solano County. Construction activities would need to meet local standards in Fairfield and Suisun City. Construction noise impacts to these NSAs (Impact N-1) would be potentially significant (Class II) but mitigable to less than significant levels with implementation of Mitigation Measures L-1a, L-1b, and N-1a.

Segment 5 (MP 30.7–65.1) – Solano and Yolo Counties Agricultural Area

Mainline work and street work would occur within 200 feet of residences in unincorporated Solano County near the Yolo County boundary. No standards apply to construction noise in unincorporated Solano and Yolo County. Construction noise impacts to these NSAs (Impact N-1) would be adverse, but not significant (Class III).

Segment 6 (MP 65.1–69.9) – West Sacramento

Mainline work and street work would occur within 200 feet of residences and a park in West Sacramento. Construction activities would need to meet local standards in West Sacramento. Construction noise impacts to these NSAs (Impact N-1) would be potentially significant (Class II) but mitigable to less than significant levels with implementation of Mitigation Measures L-1a, L-1b, and N-1a.

Segment 7 – Wickland Connection

Mainline work and street work would occur approximately 400 feet from transient lodging (i.e., a motel), however no residences are nearby. Construction noise impacts to these NSAs (Impact NO-1) would be adverse, but not significant (Class III).

D.10.3.7 Impacts of Proposed Station Changes

Impact N-4: Noise From Station Changes

Noise levels from new equipment proposed for the Concord Station could result in noise levels exceeding 55 dBA L_{dn} at nearby noise sensitive areas. (Potentially Significant, Class II)

Impact Discussion - Concord Station

Work at the Concord Station would be at least one-quarter mile from any NSA in Concord, across State Route 4. Because construction noise would be attenuated by the distance, impacts due to station work would be adverse (Impact N-1), but less than significant (Class III).

The proposed changes to the Concord Station would include a new surge pump and a new hydraulic power system for the new surge system. The surge pump motor (1,200 horsepower) and other new systems could be substantial stationary sources of noise. If new stationary sources of noise would cause more than 55 dBA L_{dn} at the nearest NSA in Concord, at least one-quarter mile away, south of State Route 4, then a significant impact would occur. In order to meet this criterion, all new equipment would need to generate less than 75 dBA at the station. Upgrades to the piping, meters, instrumentation, and controls of the Concord Station would not substantially contribute to changed noise levels. Because new pumping and power systems could cause noise above 55 dBA L_{dn} at nearby noise sensitive areas, the operational noise impacts from changes at the Concord Station would be potentially significant (Class II), but mitigable to less than significant levels with implementation of Mitigation Measure N-4a.

Mitigation Measure for Impact N-4: Noise from Station Changes

N-4a Concord Station Noise Limits. SFPP shall design the new pumping and power systems at the Concord Station so that the combined noise levels from the new equipment are less than 75 dBA L_{eq} at the Concord Station property line.

Residual Impact. With implementation of Mitigation Measure N-4a, impacts from proposed noise sources operating at the Concord Station (Impact N-4) would be less than significant.

Impact Discussion - Sacramento Station

Construction work at the Sacramento Station would be about 400 feet from homes west of Jefferson Boulevard. Noise impacts due to station work would be potentially significant (Impact N-1), but mitigable to less than significant levels with implementation of Mitigation Measures L-1a, L-1b, and N-1a (Class II).

Upgrades to the Sacramento Station product meters, instrumentation, and controls would not substantially change the levels of noise generated during operation. Because any changes in the operational noise levels at the Sacramento Station would be minor, operational noise impacts would be less than significant (Class III).

D.10.3.8 Cumulative Impacts

Construction and operation of the Proposed Project would cause significant but mitigable noise impacts. Adverse noise impacts from project operation would be limited to the area around the Concord Station, where no cumulative projects have been identified. Project-related construction impacts (Impact N-1) would be temporary, but they could overlap with adverse noise impacts related to cumulative projects in the vicinity of the pipeline. Noise from cumulative construction activities could cause significant impacts where noise from one or more cumulative projects overlaps with noise from construction of the Proposed Project. Similar to the Proposed Project, each of the cumulative projects would be subject to the locally applicable noise limitations. The local requirements along with the mitigation measures recommended for the Proposed Project (Mitigation Measures L-1a, L-1b, and N-1a) would reduce cumulative noise impacts to a level of insignificance (Class II).

D.10.4 Environmental Impacts and Mitigation Measures for Existing Pipeline ROW Alternative

The noise impacts and mitigation measures for the Existing Pipeline ROW Alternative would be similar to those of the Proposed Project, since the two routes would encounter many of the same local jurisdictions, with similar surrounding land uses and NSAs. The suggested segment to avoid sensitive land uses in downtown Davis (EP-2) would minimize potentially significant noise impacts associated with construction of the Existing Pipeline ROW Alternative and is therefore preferred over the original route through central Davis.

Two mitigation segments are suggested for this alternative. Mitigation segment EP-1 would avoid marsh habitat south of Cordelia, moving the pipeline route to an area with more noise receptors. Therefore, the original route is preferred over EP-1. As with the Proposed Project, Mitigation Measures N-1a and N-4a, along with L-1a and L-1b, would also be required on this alternative route to ensure that impacts are less than significant. The second mitigation segment, EP-2, would avoid central Davis. This segment is strongly preferred over the original Existing Pipeline ROW Alternative route because it would eliminate impacts to a large number of NSAs.

D.10.5 Environmental Impacts of the No Project Alternative

The No Project Alternative would involve minor pipeline construction activities that could cause temporary noise impacts during construction of pipeline segments or booster pump stations. However, without the project, tanker truck and/or train traffic in the region could increase, and an accident could be more likely to occur. Increased tanker truck and train traffic would also increase noise levels along major transportation corridors, introducing an operational noise impact that would not occur with the Proposed Project. The noise from this transportation and from temporary activities associated with clean up of accidents would be adverse, but it would not be likely to exceed applicable State and local standards. As a result, operational noise impacts introduced by this alternative would be less than significant (Class III).

D.10.6 Mitigation Monitoring, Compliance, and Reporting Table

Table F-9 (Section F) summarizes the recommended mitigation measures and the actions that would be necessary to ensure compliance.